

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Claims 1-46 (**cancelled**)

47. (**Previously presented**) A composition comprising:

- a) an electrode comprising a self-assembled monolayer comprising nucleic acid probes attached to said electrode with a spacer; and
- b) a hybridization indicator.

48. (**Previously presented**) A composition according to claim 47 wherein said hybridization indicator is an intercalator.

49. (**Previously presented**) A composition according to claim 47 wherein said hybridization indicator is methylene blue.

50. (**Previously presented**) A composition according to claim 47 further comprising a target nucleic acid hybridized to said probe to form a hybridization complex, wherein said hybridization indicator is associated with said hybridization complex.

Claim 51 (**cancelled**)

52. (**Previously presented**) A composition according to claim 47 further comprising a co-reductant.

53. **(Previously presented)** A composition according to claim 47 wherein said nucleic acid probe is a single stranded nucleic acid.

54. **(Previously presented)** A composition according to claim 47 wherein said nucleic acid probe comprises a double stranded portion.

55. **(Previously presented)** A composition according to claim 47 further comprising a soluble electron source.

56. **(Previously presented)** A composition according to claim 55 where said soluble electron source comprises ferricyanide.

57. **(Previously presented)** A composition according to claim 47 wherein said spacer is a conductive oligomer.

58. **(Previously presented)** A composition according to claim 47 wherein said spacer is an insulator.

59. **(Previously presented)** A composition according to claim 58 wherein said insulator comprises $(\text{CH}_2)_6$.

60. **(Previously presented)** A composition according to claim 47 wherein said self-assembled monolayer further comprises passivation agents.

61. **(Previously presented)** A composition according to claim 60 wherein said passivation agents are insulators.

62. **(Previously presented)** A composition comprising:

a) a hybridization indicator; and

b) an array of electrodes, each comprising

i) a self-assembled monolayer;

ii) a nucleic acid probe attached to said electrode with a spacer.

63. **(Previously presented)** A composition according to claim 62 wherein said hybridization indicator is an intercalator.

64. **(Previously presented)** A composition according to claim 62 wherein said hybridization indicator is methylene blue.

65. **(Previously presented)** A composition according to claim 62 further comprising a target nucleic acid hybridized to said probe to form a hybridization complex, wherein said hybridization indicator is associated with said hybridization complex.

66. **(Previously presented)** A composition according to claim 62 further comprising a co-reductant.

67. **(Previously presented)** A composition according to claim 62 wherein said nucleic acid probe is a single stranded nucleic acid.

68. **(Previously presented)** A composition according to claim 62 wherein said nucleic acid probe comprises a double stranded portion.

69. **(Previously presented)** A composition according to claim 62 further comprising a soluble electron source.

70. **(Previously presented)** A composition according to claim 69 where said soluble electron source comprises ferricyanide.

71. **(Previously presented)** A composition according to claim 62 wherein said spacer is a conductive oligomer.

72. **(Previously presented)** A composition according to claim 62 wherein said spacer is an insulator.

73. **(Previously presented)** A composition according to claim 72 wherein said insulator comprises $(CH_2)_6$.

74. **(Previously presented)** A composition according to claim 62 wherein said self-assembled monolayer further comprises passivation agents.

75. **(Previously presented)** A composition according to claim 74 wherein said passivation agents are insulators.

Claims 76-105 (cancelled)

106. **(New)** A composition comprising:

a) an array of electrodes, each comprising a self-assembled monolayer comprising nucleic acid probes attached to said electrode with a spacer, wherein said spacer comprises an insulator; and

b) a hybridization indicator.